

Abstract

5 The present invention is directed to a sensor for detecting
changes in the distance between a first and a second location,
having at least one substantially helically coiled optical
fiber, which is able to be mechanically connected to at least
one of the locations, and having a light transmitter and a
detecting device for optical signals, the detecting device
being able to generate an output signal, which is dependent
10 upon the polarization state of the optical signal transmitted
via the optical fiber. The present invention is also directed
to a method for detecting the changes in distance between a
first and a second location, having the following features: at
least one of the locations is mechanically coupled to a
15 substantially helically coiled optical fiber; an optical
signal having a known polarization state is launched into the
optical fiber; following transmission over the connecting
line, this is detected in such a way that information is
obtained with respect to its polarization state; from this
20 information, the change in distance is determined.